VIRTUAL TRANSITIONS: A Report from a Shifting Field —DRAFT—
Presentation based on this paper, Media in Transition 7, MIT, May 2011 online at:
http://www.slideshare.net/LoriLanday/virtual-art-inand-transition
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Figure 1: L1Aura Loire, Lori Landay's avatar, is on a shifting field!! For video, go to: http://www.youtube.com/watch?v=-dL9ntCC7kc

Change, transition, and instability are intriguing concepts in virtual worlds. The virtual world itself is made up only of constantly changing data, and one of the appeals of a virtual world is how mutable it is, how easily one can change self-representation, environment, activity. As quickly as something can be created, it can disappear. And of course, the platform itself is an ephemeral one, existing as it does "virtually," without actually being there materially. The virtual world's existence depends on software and networked technologies, on a company's or an institution's or an individual's server, and when those break down, the world breaks, sometimes disabling functions on a particular server, sometimes across the entire grid. *In software, stability is not a state, but a process; when we bring the expectations of a physical world to what is developing software, there are bound to be clashes.*

This paper (draft version, not published or final) is the middle part of a larger paper written on the topic of this year's Media in Transition 7 "Unstable Platforms: The Promise and Peril of Transition" about a spectrum of responses to change in virtual world platforms: from resistance to change, to using the transitory properties of the virtual world to create art within the established virtual world Second Life, and to advocating change and tolerating instability by opting for OpenSim virtual worlds and hypergrid connectivity. (Full paper, draft version is

online at: http://web.mit.edu/comm-forum/mit7/papers/Virt_Trans_Landay.pdf) This section focuses on the second response: to self-reflexively make impermanence and change a focus, subject, method, or mode of interaction in art or building. Examples from the work of Oberon Onmura, Selavy Oh, and Glyph Graves illustrate how artists explore these themes in style, content, and medium. It follows a discussion of the Second Life viewer interface.

Part 2: Making Virtual Art out of Change: Glyph Graves, Selavy Oh, and Oberon Onmura

To digress for a moment from virtual worlds accessed through viewer interface applications, let's extrapolate from virtual worlds to consider truly immersive environments, rather than graphical representations of them experienced via avatar. Using a viewer interface to participate in a virtual world with any degree of agency (and the kind of world-building possible in Second Life and OpenSim environments as well as the experiences and resulting subjectivities enabled by those platforms have a very high degree of agency,) is still a flat-screen graphical rendition of a three-dimensional space, and the avatar is a stand-in for the user, no matter how strong the identification, how immersive the emotional or intellectual experience, how kinetic the virtual kino-eye,[i] or how intensely the mirror neurons fire. But as Oliver Grau concludes in *Virtual Art: From Illusion to Immersion*, aesthetic distance (and other kinds of distance between self and environment necessary to act upon an environment) vanishes as the interface dissolves if a person is immersed in a 360 degree high resolution illusion space:

> In virtual environments, a fragile, core element of art comes under threat: the observer's act of distancing that is a prerequsitie for any critical reflection. Aesthetic distance always comprises the possibility of attaining an overall view, of understanding organization, structure, and function, and achieving a critical appraisal. This includes searching for hypotheses, identifications, recollections, and associations. Not withstanding the longing for "transcending boundaries" and

"abandoning the self," the human subject is constituted in the act of distancing . . . (202)

Grau's point is that in virtual reality (not virtual world viewer interface), interfaces become more "natural," the boundaries of the data space seem to disappear. One way to think about this is that as virtual reality becomes less like the general purpose interface and more a kind of cultural interface that replaces in a significant way the actual, physical world, be it reduced to keyboard, mouse, and screen, as the entire visual field and haptic, kinetic interaction becomes a virtual control panel, the lines between self and interface become blurred. Grau and Manovich both wrote before the advent of the kind of augmented reality exploding today, where we can imagine layers of different kinds of interfaces, haptic, kinetic, visual, overlayed on the actual, material world, which actually do the opposite of what Grau describes above. Instead of subsuming the actual with the virtual in an illusion, augmented reality makes the actual world part of the interface, recasts the material world as another level of window, a level of data, that can acted upon through interface, sometimes in the form of the general purpose interface. When we re-vision reality through augmented reality, rather than substituting virtual reality for actual reality, we do not necessarily dismiss physical reality or immobilize the body.

After thinking through some possibilities for augmented reality, which reveals what virtual worlds accessed through the viewer interface are not, we can return to current virtual worlds, and see how artists call attention to their possibilities and limitations, especially through works that use the malleable, transitory, and changeable characteristics of interactive, immersive 3d virtual art in their work. An artist has a range of features of an artwork which he or she can change: an object's appearance, position, or even whether it is there or not; what an avatar does, its camera position so it is looking at something specific, or where it is; and how objects, avatars, and the virtual world environment interact with each other. Although not all scripted changes require someone to click (some are triggered by chat, or proximity, for example), I often term

these interactive pieces "clickables," and to me, they comprise the most interesting art being created in virtual worlds, along with some performance art.[ii] For a range of examples from winners of the University of Western Australia's year-long Imagine 3d Art & Design Challenge, see my machinima "Click: Immersive & Interactive Virtual Art" http://www.youtube.com/watch?v=2Sf3Q2VAlKE.

This section focuses on three artists who make art about and out of the virtual world's capabilities for transformation and change: Oberon Onmura, Selavy Oh, and Glyph Graves, although it could easily make analogous points about transition and instability in the content, technique, and aesthetics of several other virtual artists, including comet Morigi, Gazira Babeli, Blue Tsuki, Maya Paris, Misprint Thursday, Douglas Story and Desdemona Enfield, Pinkpink Sorbet, pixel Reanimator, Kolor Falls, FreeWee Ling, Bryn Oh, and others. The artists focused on here extend conceptual art into the virtual platform where art is necessarily of the mind, not the material, and the artist' (and observer/participant') agency is unquestionably central. Each uses different aspects of the form and content of virtual art, from the more figurative Glyph Graves, to the Dada-influenced Selavy Oh, to the virtual-minimalist Oberon Onmura.

We begin with minimalism, because by stripping the figurative, we can focus more fully on the changes occurring to the simple shapes in the virtual environment, observed and acted upon by the avatar. What does minimalism mean in a virtual world? For Oberon Onmura, it means an aesthetic style that eschews textures and sculpted shapes for simple geometric prims and colors, with a focus on what interested the minimalists of the 1960s: the relationships of objects, people, and the environment in which they are installed. But the specific properties of a virtual world creates new questions: If the column or cube in a space of 1960s minimalist artists Robert Morris and Donald Judd is about a new relationship of the person perceiving it to the work of art, then what happens when that object is not really there, or it can pass through or be passed through by the avatar, or move in response to changes in the virtual world's clouds, part

of its weather system? Oberon Onmura deploys scripts that work cleverly with data and the Second Life physics engine to set objects, avatars, and the virtual world environment in interaction with themselves and each other, in different combinations. Oberon Onmura's obelisks change, in a piece like "Path Monitor," (May 2009), when an avatar walks through them, turning a color specific to that avatar and displaying its name. The obelisks show the path the avatar took.

Figure 2 :"Path Monitor" by Oberon Onmura. Screenshot by Lori Landay

Two other Oberon Onmura installations, "Plaza" http://vimeo.com/19230602 and "Storm Cells" http://vimeo.com/18762858, are experiments with dynamic transition, showing how the same scripts to change the height and color of blocks of the floor according to changes in the virtual world's clouds can create very different effects. Working as a virtual-minimalist, with the barest hint of object shape and color suggesting either a natural or urban landscape, where "Storm Cells" achieves an ethereal sweep over an entire sim of colored sky ballet reaching to the sky, "Plaza," with its concrete-like slabs and randomly appearing chairs that fall over and tumble

around, suggests an unstable surreal urban space, disturbing yet equally fascinating to watch and be in.

"Plaza" offers what can be interpreted a public city space with its grayscale colors and smaller scale, a piece that an avatar easily can take in and walk around on, except perhaps for the unstable terrain and chairs that suddenly appear, sometimes topple, and then disappear. The chairs, more like office chairs or utilitarian extra chairs one might have around than comfy, welcoming chairs, with their spiky legs all akimbo across the shifting plaza, can be sat upon, but for what? Every now and then, a red one appears, but its color doesn't seem to have any special significance after all. It, too, comes and goes without purpose or warning, like the unknown people who cross the city plaza, perhaps there for a time, then gone, just as unknown and unchanged as when they entered, or maybe not. Even though Oberon rejected my suggestion that in a piece like "Plaza," his chairs are a reference to Joseph Kosuth's "One and Three Chairs" (1965), I still see something similar in the choice of the chair in his (and Selavy's) pieces. A functional object, taken out of its usual functional context, like the chairs on this plaza, calls attention to the nature of the object in art, a favorite concern of minimalism (as well as surrealism and Dadaism).

In contrast to the urban, human-made, yet lonely "Plaza," with its cold grays and moving floor, "Storm Cells" (2009) is a full-sim work that not only uses the cloud formations as data that dictates the colors and height of the cubes that comprise the installation, but becomes part of the virtual world sky. Where the change and instability seems disruptive, harsh, abrupt with the combination of the colors and the chairs in "Plaza," there is a stronger sense of continuity and flow in "Storm Cells." The kind of change is not controlled by the artist, but by the virtual world weather, so it is the aesthetic frame, the metaphor, the scope, and the location in which the change occurs that shape my interpretation, my subjective experience of the two pieces. By experimenting with change, by making the agent of instability constant between the two pieces,

Oberon sheds light on not only on change, but on the perception of change itself.

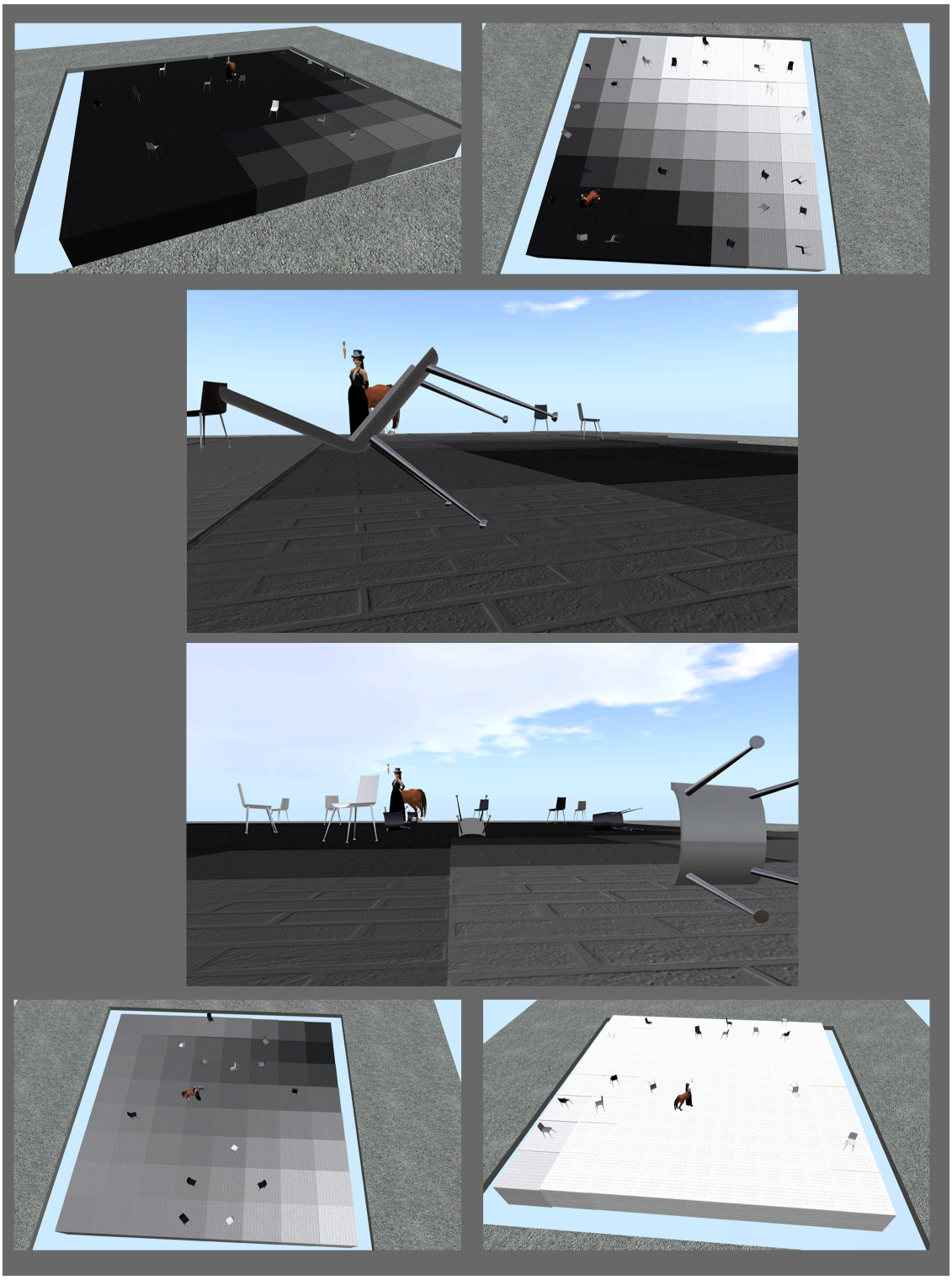

Figure 3: Change and instability seem cold and impersonal "Plaza" by Oberon Onmura. The blocks, which change color and height in response to the changing density of the virtual world clouds, suggest an unpredictable urban landscape, with its grayscale colors & inhospitable chairs.

A similar self-reflexivity abounds in the work of Selavy Oh, the artist working in virtual worlds who Oberon considers the most influential on his work. Selavy Oh's art installations in Second Life are always an experience that interfere with you in some way. A master at manipulating the physics of the virtual world in a tricksterish, sometimes obstinate way, Selavy Oh's pieces are initially benign-seeming because of the minimalist aesthetic she appears to share with Oberon. But where Oberon's pieces tend to be about a process of interaction and intersection between objects, avatars, and the environment, Selavy Oh often adds a more emotional element, playing with expectations, and refusing to play along with convention. Where Oberon's disruptions might tip you over, Selavy's could entrap and confound.

Selavy created one of the most annoying art installations I've experienced, diabolical in its irritating cleverness. In a way, it is the less pleasant experiences that test the intensity of virtual subjectivity—the sense of loss when an avatar friend stops logging in, or when a virtual place disappears forever. "Attractive Object" (2009) was installed at one of those places I miss, Brooklyn Is Watching, and it worked this way: it would pull your avatar from someplace on the sim under the floor, and pull you back when you tried to walk away from it. It literally stopped you from whatever you were doing (in the case of this machinima clip, from filming Selavy's other piece for a lecture I was giving on virtual art!) and took control of you for a short while. I think it got me three or four times that week. The local chat has "attractive object" call the avatar by name and say: "look at Selavy's work!" and "thanks for your visit!" as if it were voluntary. After bringing you back when you try to leave, it says: "please don't leave already! Thanks for coming back :)" Selavy uses the emoticon, exclamation point, and cliché as she does in other text chat pieces to underline the hypocrisy of language and our discourse, in virtual worlds and beyond. Overall, "Attractive Object" uses the scripting and physical properties of the virtual world to disrupt and destabilize, wresting control, plunging the avatar and user into momentary paralysis. Incapable of doing anything other than looking at the cube posing as the attractive

object until it releases you, the piece calls one's notion of stability and control into question.

Figure 4: "Attractive Object" by Selavy Oh captures L1 at Brooklyn Is Watching, August 2009. Selavy often creates art experiences that interfere with you, causing transition, destabilizing your sense of space, place, self, art, object, and the platform itself. Machinima at: http://www.youtube.com/watch?v=E-AfQjFLLbU

Selavy Oh's most recent installation, "Construct," is a tour de force of the kind of playful and sometimes disturbing use of transformation, instability, control, and change evidenced in "Attractive Object." (See machinima of "Construct" here: http://www.youtube.com/watch?v=JNhMMpih_tI&feature=related .) There is no way to predict what will happen when entering the seventy-five cubes built over seventy-five days between February and May 2011. Each yields a different experience, and not always the same one, almost all without a context other than an experience of being in a space constructed in one way or another, that may or may not change. Sitting on a chair might trigger an animation, or whisk the

avatar to another location. Walls might disappear, be able to be walked through, or might close in around you. An "identity check" performed a google search on my avatar name that displayed on a cubicle wall. A small blue rectangle showed where my avatar was in a model of the whole installation, and stayed there, a trace that I had been there. The word "construct" showed up, mostly in red, in different ways. Other text, asking questions, appears throughout, a hint of the artist's thoughts on that day, perhaps, but more of a tease than a record, and always an invitation to think.

Figure 5 In Selavy Oh's "Construct," each space contains (or doesn't!) a different experience, each built on a different day over 75 days. To experience "Construct" is to experience transition.

As artist Oberon Onmura writes about the installation, “Selavy is among the very few artists working with this "new medium" who fully explores its conceptual space. Her

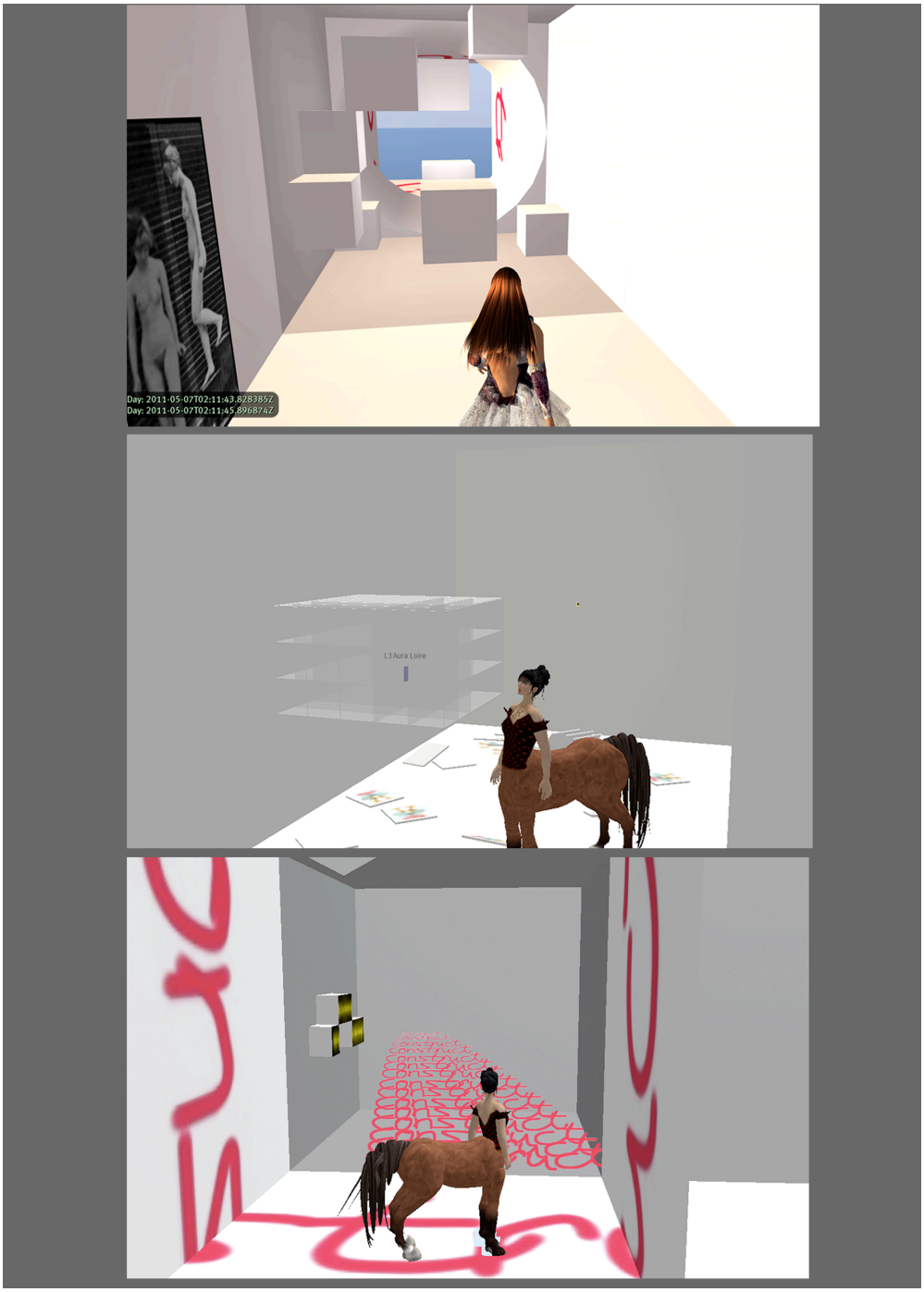

Figure 6: Some spaces connect. Others have walls that move around your avatar, trapping you. The word “construct” appears in different ways throughout, verb or noun????

resulting artworks, over the past few years, have consistently shown the rest of us how to expand the boundaries, exploit the resources, examine expectations - in short, she shows us what it means to make art in a 3D virtual environment that is very definitely not 'real life'" ("Explore 'Construct', the Latest Second Life Installation by Duchamp-Influenced Conceptual Artist Selavy Oh," http:// nwn. blogs.com/nwn/2011/05/second-life-artist-selavy-oh.html#more).

Selavy's chairs, like Oberon's, remind me of Duchamp's ready-mades (as well as Magritte's 1929 "The Treachery of Images," with the declaration "Ceci n'est pas une pipe." under the very realistic image of a pipe, and Selavy's dynamic use of the word "construct" plays with these referents, too.) On one level, an avatar does not "need" to sit, having no real legs that tire, or body that can feel more comfortable in one position or another. On another level, what an avatar does is part of the user experience. Yet on another level, sitting on an object reduces lag for the user and everyone else in a sim, and so does perform a function in the virtual world. And even more pertinently in this discussion of instability and change in art, when one clicks on, or sits on, something for the first time, one does not know what will happen. If a chair is part of a museum installation, it probably can't be sat upon, but the virtual chair must be sat upon because it is the interface. By using a chair, instead of another, more specific, precious object, Selavy in "Construct," or Oberon in "Plaza" connect to the new role that ready-mades can play in virtual art. Sit here. Experience what happens.

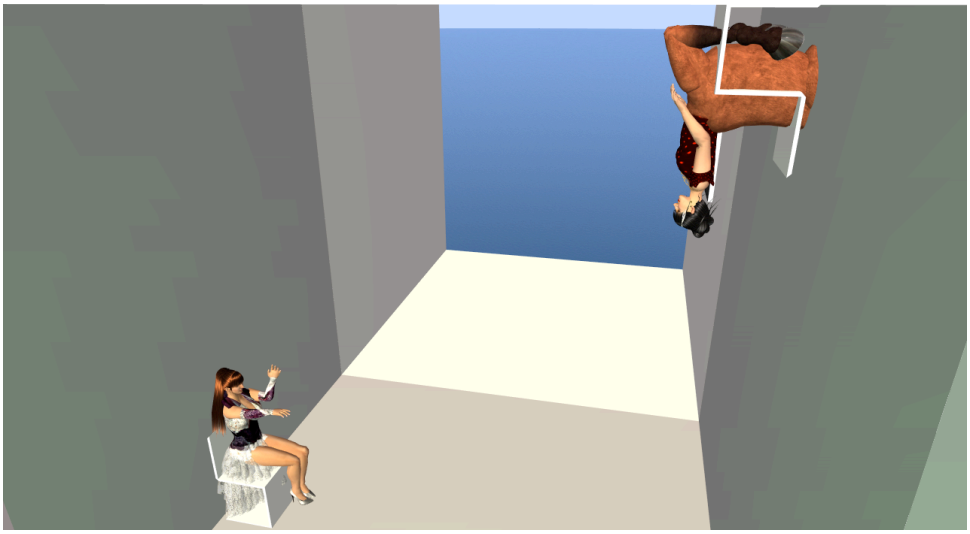

Figure 7: Sitting in chairs in "Construct."

As I often do, I made a virtual art piece that explores the critical concepts I've been thinking about in this paper. "One and Four Timeboards" takes an imaginary prop from my recent machinima "Time Journey" (http://www.youtube.com/watch?v=zpWN0ELs0jk)and gives it the same installation as Joseph Kosuth's *One and Three Chairs* (1965): the object itself, a

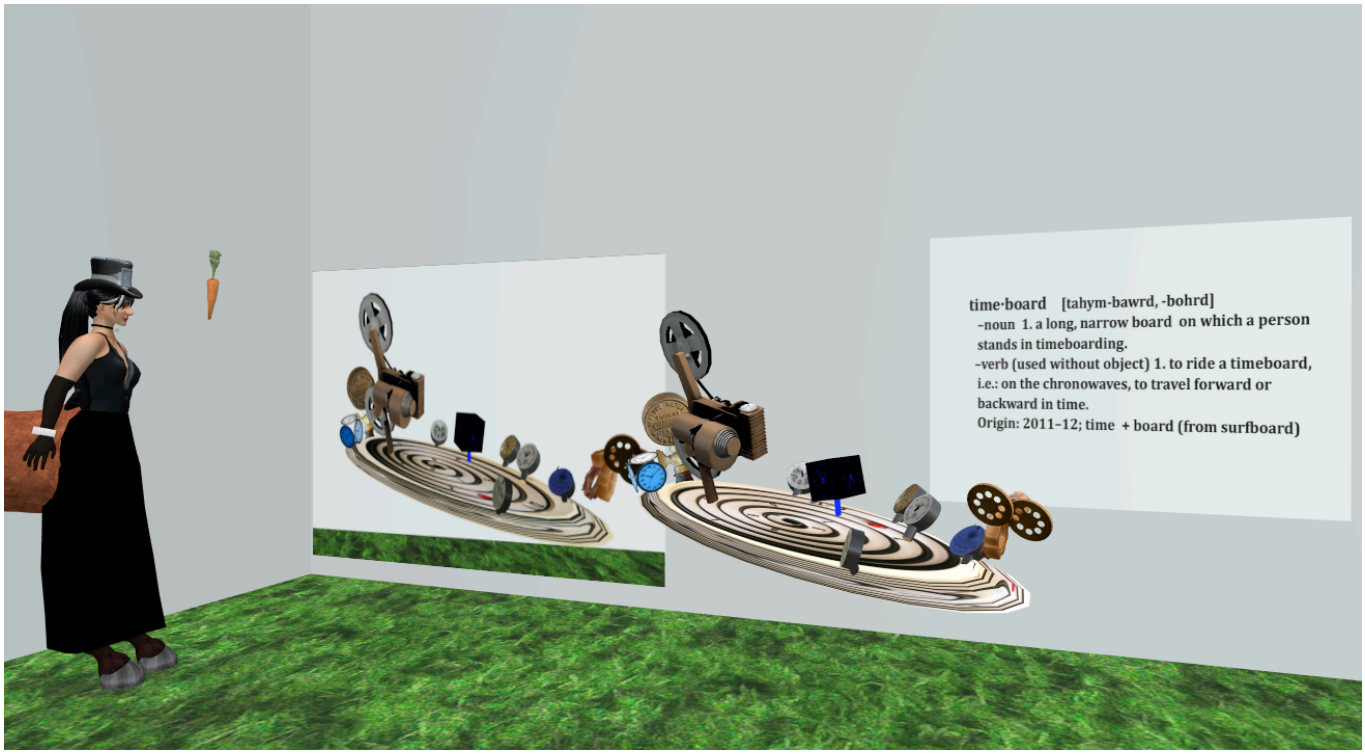

Figure 8 Photograph of what is on the ground, "One and Four Timeboards" by L1Aura Loire/Lori Landay

photograph of the object where it is installed, and aligned with the top edge of the photograph, a dictionary-type definition of the word. But because this is a virtual world piece, it is clickable, and yields, to the user, an unknown and unpredictable result: being teleported to a sphere above the gallery which mimics the swirling spiral that marks the timetravel sequences in the movie.

Figure 9: Photograph, "One and Four Timeboards," sky installation. Where the avatar goes when it clicks on the timeboard on the ground.

It is meant as a moment of disorientation, of disruption, of instability in one's perceptual field, to be in a "gallery" space of relatively static representation and then to click and suddenly plunge into the swirling vortex. It suggests that in virtual art, there is a fourth aspect of meaning to consider beyond the object, the word, and the photographic image: the experience of transition.

In contrast to Selavy and Oberon, the third artist, Glyph Graves, is a more figurative artist, but his work concerns transformation and change in form and technique as much as the minimalists. Glyph is the avatar of an Australian geneticist and evolutionary biologist, and he draws on his scientific expertise in creating virtual artificial life forms, some of which evolve according to genetic algorithms, or other real-world data or models.

For example, his piece "Antarctica" uses real-time weather data from nineteen weather stations in Antarctica as the basis for its visualization in the virtual world, analogous Oberon' use of the virtual world "weather" in "Plaza" and "Storm Cells." Glyph Graves takes data from the University of Wisconsin-Madison's AWS site, and turns it into an evocative, dynamic, always changing piece that uses sound, color, shape, and movement to, the artist says, pose the question

of "What is an avatar?"[iii] To me, however, it calls attention to the metaphors we use to describe places, whether it be a continent like Antarctica, so hostile to human needs for habitation that it might as well be a stream of data, or an ice sculpture, or an oil-like possibly menacing giant waking from slumber if it melts—or the metaphor of space and place, of geography, that we use every time we say "virtual world." It is that metaphor that encourages a certain expectation of stability, of permanence, in the simulated "world."[iv] As shown in the photographs from the installation of the piece in the Housebugs show for Cyberfest 2010, the piece has a circular transformation, starting and finishing with blue and white ice shaping the continent. When the avatar clicks the platform however, a process begins. The ice rises, and transforms into darker blue, and then black shapes, which form a figure; the figure stands, as if waking from long slumber, and stretches when it reaches full length. Suddenly it whisks into different colored disks, which settle into a color and position based on the real-time weather data Graves uses as the input in his scripts. This is the part that is different each time. After a pause as the visualization of the real-time data, the disks converge into the form of the figure again, almost as if going home, back to sleep, and then the figure reverts to the ice filling the shape of Antarctica on the platform once again. The music of this transmutation marks and connects the different phases. See Machinima of "Antarctica – An Individual Existence" by Glyph Graves: http://www.youtube.com/watch?v=v4jvs5gP2JA

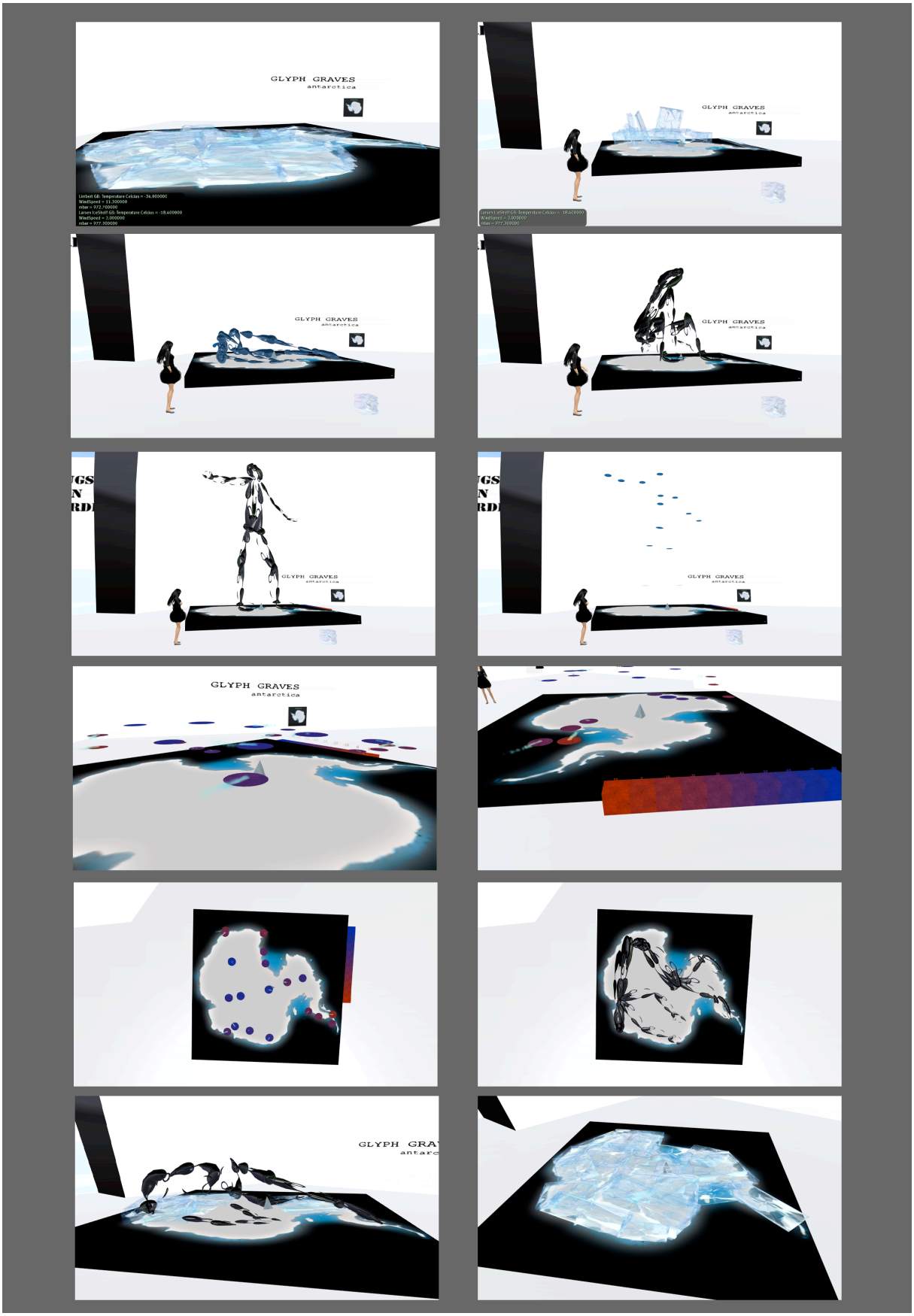

Figure 10: Photographs of Glyph Graves's "Antarctica" by Lori Landay

Graves had previously used a similar kind of assembling and disassembling figure in his Entropy sim-sized installation for the Shanghai 2010 Expo. (See: short video filmed at the Entropy sim, a deleted scene from my machinima, "Open End," at http://www.youtube.com/watch?v=oO_ldLBsn-c and machinima of the entire sequence: *Entropy*, by Chantal Harvey: http://www.youtube.com/watch?v=cEeiHbRhH0A .)

Several figures comprised of flowy parts perch on mountaintops overlooking a lake; an avatar whispers into the "whisper tree" (which was part of all the sims built for the Expo) and the figures move out of their individual figurative form into their constituent parts of color and shape and glide toward the center of the lake, joining and melding with the parts of the other figures who had been on other mountaintops. The parts join in a kinetic dance of color and movement, something made up of the same material that can sometimes come back together, and sometimes must exist apart. Soon the time comes for the pieces to reassemble and wing their way back to their places on the mountaintops, and they swirl along, slipping back into position as figures, once again taking up—what is it? Guardianship? Surveillance? Waiting until they can conjoin again? Respite until they must intermingle yet again? There is something evocative in the ambiguity of these figures, endlessly repeating their scripted actions, elegantly moving between states of abstraction and figuration.

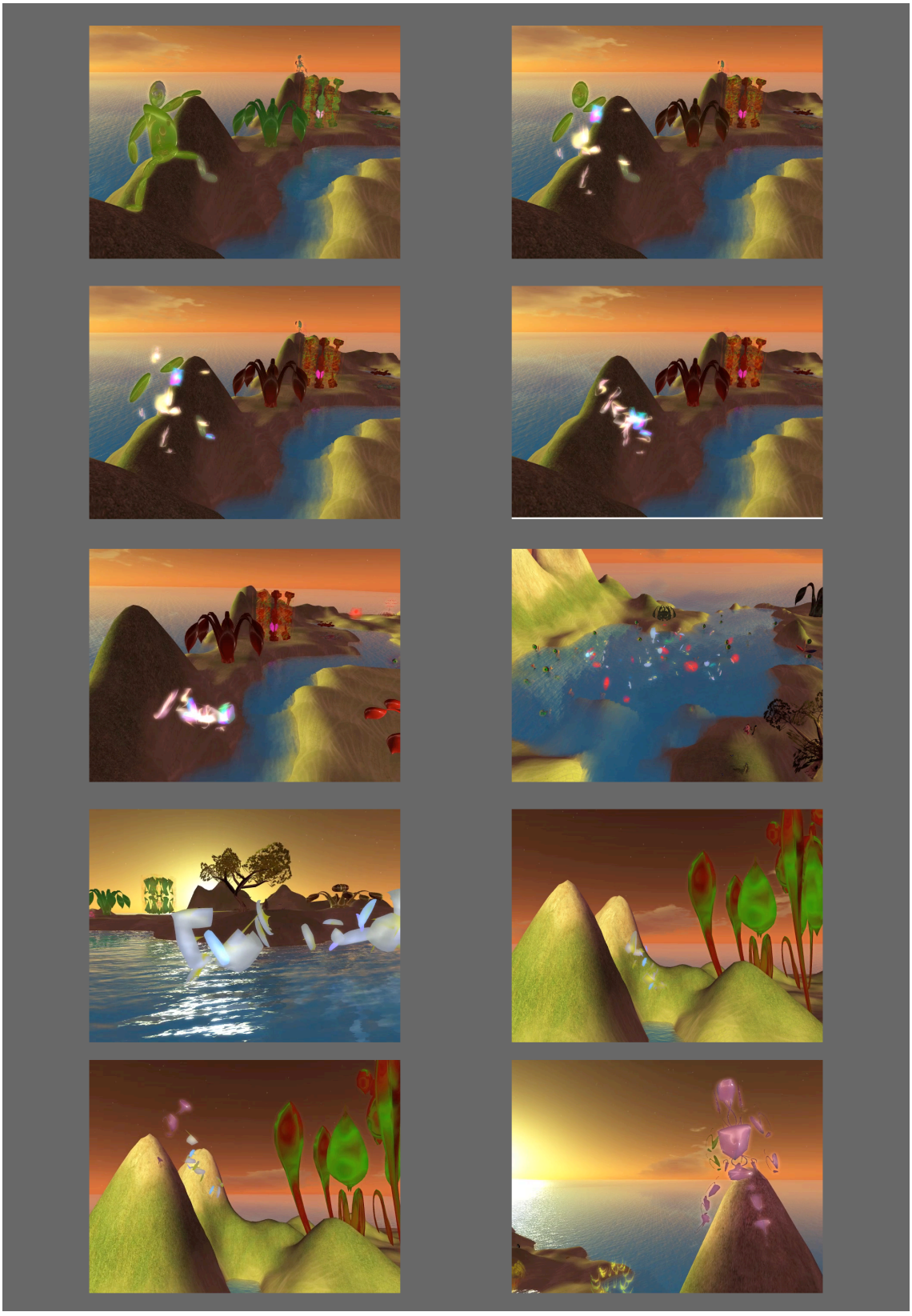

Figure 11: "Entropy" sim by Glyph Graves, 2010. Photographs by Lori Landay.

In each of these figure pieces, one click sets off the chain of events that cycle through the series of state changes until they return to the original one. The last piece I'll discuss here, "Organic Recurve," has two levels of interactivity. One is within each of the "organisms" Graves creates, and the other is when an avatar interacts with the piece by touching an organism, or by moving around within the piece. The organisms change color, move, and emit sounds.[v] When I was filming the UWA winners for "Click," I spent a lot of time in "Organic Recurve," "playing" the piece with two avatars, exploring the range of behaviors and sounds. The kinetic interactivity in that piece, with its two levels of the objects being triggered by each other and the avatar also causing state changes in more than one way (clicking and proximity), makes for a very dynamic experience, which is in an interesting tension with the soothing, yet "distressed" sound and shiny, glossy exterior of the organisms. There is a lot going on in that piece, and immediately, one becomes part of it. It is indeed, as the artist terms it, "social."

In the three pieces discussed here, which range in scope from the relatively small "Antarctica," to the dome in which the avatar moves around that contains "Organic Recurve," to the sim-wide "Entropy," stasis is not the desired situation. It is change, instability, the moment of transformation, the process of becoming and unbecoming, that interests. We experience transition and instability as cyclical in "Antarctica" and "Entropy," or as something in which we participate, in "Organic Recurve."

Transition is the goal in the work of Oberon Onmura, Selavy Oh, and Glyph Graves. Objects in their pieces change. They change in ways that are particular to the virtual world, and to different degrees, call attention to the ephemeral nature of the virtual world. Oberon's pieces "Plaza" and "Storm Cells" make you aware of the virtual world weather, but not as part of a realistic simulation, but an interesting dynamic data set that shifts, part of the environment. Look what can be done with it this way, then that. Selavy's pieces that use the physics engine to move or trap your avatar, or scripts to suddenly make the walls and floor disappear so that your

avatar and the objects are suspended in air, jerk the physical properties of the virtual world around, and your sense of stability with them. Glyph's cyclical pieces, moving through each stage to begin again, are about transition and change, an organic process that he brings into the virtual world not exactly mirrored from actual biology and organism behavior, but based on them.

I've focused on these pieces, these artists, because I am primarily interested in 3-D virtual art that takes advantage of the specific properties of a virtual world platform, like scripting, animating an avatar, taking camera position, particles, transparency, and interactivity (some of which have actual world analogs in installation art, and some of which do not). Two-dimensional art or photography that is displayed in a virtual world can be interesting to see, but then the specifically virtual aspect is how it is shown, or virtual exhibition, which can be quite innovative and could transcend mirroring actual-world models. The distinction draws on the concept of "impossible in everyday life," a shorthand for summarizing what is possible only in a virtual world, whether that be transcending physics, or one's avatar being able to be, for example, a centaur. To be sure, some of what is important and significant about actual sculpture, actual installation, is the manipulation of materials, working within constraints, and triumphing over circumstance. When we see a huge steel sculpture, for example, that dwarfs us, rising up out of a space, whether a grassy expanse, a city plaza, or inside a structure, that gives a feeling of perspective and changes the space we are physically experiencing in a way that seeing an avatar in front of a virtual recreation of the same sculpture cannot. Analogously, what is important about experiencing art in a virtual world, is the manipulation of virtual materials, and triumphing over those circumstances. When the avatar walks through it, or when the "steel sculpture" changes into something else, or moves through the avatar and takes on its name, or vanishes completely, there one moment and then gone . . . then that is where the experience of virtual art actualizes the possibilities of a platform characterized by transition and transformation.

[i] Landay, "Virtual KinoEye: Kinetic Camera, Machinima, and Virtual Subjectivity in Second Life." *The Journal of e-Media Studies* 2 (1) (2009). http://journals.dartmouth.edu/cgi-bin/WebObjects/Journals.woa/2/xmlpage/4/article/340

[ii] Performance art in virtual worlds is beyond the scope of this piece. I've touched on the idea that one kind of virtual subjectivity can be thought of a kind of performance art elsewhere. For an excellent essay on performance art in virtual worlds, see: Patrick Lichty, "Why Art in Virtual Worlds?" http://colum.academia.edu/PatrickLichty/Papers/252748/WHY_ART_IN_VIRTUAL_WORLDS_E-HAPPENINGS_RELATIONAL_MILIEUX_and_SECOND_SCULPTURE

[iii] From the description for youtube video, "Antarctica –An Individual Existence," Glyph Graves: "Created in Second life using real time data from 19 automated weather stations in Antarctica Antarctica .. a continent of of ice, rock and wind that for most of its frozen expanse rises above the sea as the Antarctic High Plateau around 3000 meters. This piece brings the continent into a virtual world and poses the question : What is an avatar? The word avatar is not a new word --noun 1. Hindu Mythology. the descent of a deity to the earth in an incarnate form or some manifest shape; the incarnation of a god. 2. an embodiment or personification, as of a principle, attitude, or view of life. 3. Computers. a graphical image that represents a person, as on the Internet. This piece is a personification of a continent, and a fragment of its current (real time) existence is projected into virtual in the same way that we project a fragment of ourselves into SL and call it our avatar . It speaks as a symphony of music that is generated by the wind direction from location across its body. Its form is described by the height and position of its parts. Its skin (the thin layer of air just above the ice) coloured by its temperature. As this is real time the composition will change from hour to hour, day to day as the conditions at each of the 19 locations on the continent change giving a song of Antarctica. While the discs are visible as well as touching the disc there is also a colour scale that will tell you the temperature at each site at a glance.
This piece has two phases
Phase One The first incarnation personifies the continent ice cover as a human figure. It stands then breaks into its component parts. Each part is a real location on Antarctica, the site of an weather station that is streaming real time data on the conditions.
Phase Two The second incarnation transforms into separate discs and takes the last 20 readings from each of the 19 weather stations (about the last 5 hours with the last being current). Each disc represents an automated weather station and contains a set of individual notes. The direction of the wind at that location determines which note from each set is played at each location. NB there are no sound loops rather notes are generated one at a time depending on the wind direction.

The direction of the wind is also given by the direction of the texture animation and the particle stream. The speed of the wind is given by the speed of the texture animation and the density of the particle stream. The temperature is signified by colour - red is the hottest and bright blue the coldest. If it goes over 0 degrees it will begin to drip. The relative height of the discs conform to the height of the weather station.

Technical aspects and Acknowledgements I take the data from the web, pipe it though my hosted web site and transform it into music and colour. It uses several transformations that are facilitated via scripts that modify the primitive parameters of each unlinked prim in the piece. For the height of the station I have used the barometric pressure in the same way it is used by an aeroplanes altimeter. Any difference due to temperature or local air pressure changes is negligible compared to the variation caused by altitude. The data is provided by the University of Wisconsin Madison through its AWS site and I gratefully acknowledge their permission to use it. I pull the information from that site and then pre-processed on my hosted site (I learnt php for this project) Each element in the piece then request the last 20 readings (about the last 5 hours). I use the temperature, wind speed, wind direction and barometric pressure.

All scripts (off world and inworld), sculpts and textures are my own.

The music come from sets of notes in each element. I utilise 4 instruments to create the symphony.
Ghost Blow notes created by Jovica - www.freesound.org
flute - by Lorin Tone
Chord set by Lorin Tone.
Violin notes London Philharmonic"

[iv] For example, I didn't understand at first why suddenly I might have trouble moving from one region to another. When someone pointed out a "sim crossing" sign and explained that each sim was on a different server, and that all my inventory assets had to transfer to another server, I could understand and better tolerate a reasonable moment of instability in what looked like it should be a seamless space. By making that technical situation into a metaphor that interrupted the visually seamless space, the sign may have been less "realistic" in one way, but much more so in another, more useful way.

[v] From the description on youtube, "Organic Recurve," Glyph Graves

"This is a social piece.
There are two levels of social interaction, between each of the "organisms" and between the organisms and the avatar(s). The interactions are initiated by the avatar touching the one (or more) of the organisms. The touched organism will change to a distressed state changing colour but not emitting any sound. The close by organisms will then respond to their "distressed"/ activeated neighbours depending on the degree of their removal from that neighbour (or degree of separation if you like) firstly by becoming distressed themselves and then depending on their degree of removal they will change to a colour and play a note (one of the three available depending on the distance of their active neighbour). Their neighbours will in turn react to them and so on. Any distressed organism further than 3 away will be ignored emphasising a friends and family/social grouping model of reaction. If the avatar moves close then the spatial arrangement of the organisms will change to crowd around the avatar providing another level of interaction.

NB its not a sound loop, each organism will produce one of a different set of notes depending on a simple rule set. The melody gives an audio sculpture of the interaction and will be unique on each occasion.

Technical stuff
It's a cellular automata ...of sorts...of my own design. it doesn't have a fixed pattern of neighbours, the physical location of the elements depends on the avatar(s) and the neighbours are defined both spatial position and by their "emotional" condition. It is also different from the run of the mill cellular automata in that it is asynchronous (i.e. it does not update all at once). “
http://www.youtube.com/watch?v=9aVfxMVO6Y4